

PATENT ABSTRACTS OF JAPAN

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(71)Applicant : OKI ELECTRIC IND CO LTD

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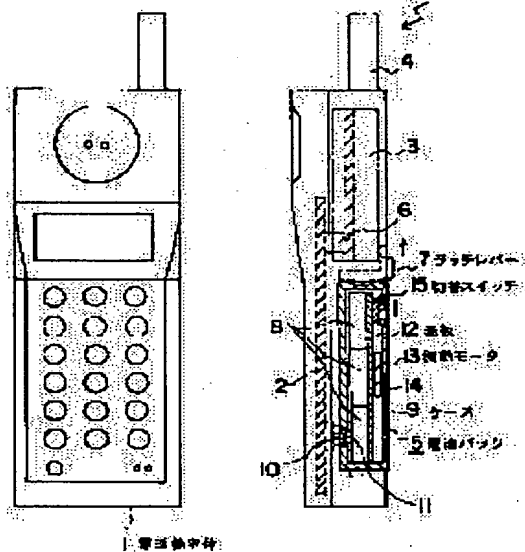
(72)Inventor : WATANABE KIMIHIKO

(54) TERMINATION VIBRATOR OF RADIO COMMUNICATION DEVICE

(57)Abstract:

PURPOSE: To constitute a vibrator separated from a radio communication device or a battery pack which includes the vibrator detachably from a device main body.

CONSTITUTION: A control part 2 and a radio part 3 are connected by a connector 6, and the battery pack 5 and main body 1 are so constituted that they can be attached and detached by single operation by operating a latch lever 7. A substrate 12 is provided in a battery pack case 9, a vibrating motor 13 as the vibrator is fixed to the substrate 12 by an adhering means such as a both-sided tape 14, and electric components and a changeover switch 15 are mounted. The vibrating motor 13 is put in the battery pack case 9 to reduce the influence on the radio part 3 and eliminate a motor fitting part, making a telephone set main body thick. Termination indicated by vibration and termination by a sound can easily be switched with the changeover switch 15, and the need for command switching by conventional key operation is eliminated.



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CLAIMS

[Claim(s)]

[Claim 1] The arrival-of-the-mail vibrator of the radio communication equipment characterized by to have the vibrating motor fixed to the substrate, and the switch which is made to turn this vibrating motor on and off, and changes the arrival by vibration, and the arrival by the sound, for said vibrating motor to drive with the terminating signal received by said body of equipment, to generate vibration, and to tell arrival of the mail in the body of a radio communication equipment, and the cell pack case which were constituted free [attachment and detachment].

[Claim 2] In the body of a radio communication equipment, and the arrival-of-the-mail vibrator case constituted by the connecting means free [attachment and detachment], a dry cell, Have the vibrating motor which used this dry cell as the power source, and was fixed to the substrate, make said connecting means detach and attach, and the arrival by vibration and the arrival by the sound are changed. Arrival-of-the-mail vibrator of the radio communication equipment characterized by for said vibrating motor driving with the signal with which a ringer tone is sounded through said connecting means with the terminating signal received by said body of equipment, generating vibration, and telling arrival of the mail.

[Claim 3] Arrival-of-the-mail vibrator of the radio communication equipment according to claim 1 or 2 said whose radio communication equipment is a portable telephone.

[Claim 4] Arrival-of-the-mail vibrator of the radio communication equipment according to claim 2 said whose connecting means are a jack terminal and a plug.

[Claim 5] Arrival-of-the-mail vibrator of the radio communication equipment according to claim 2 or 4 which formed the clip for equipping a pocket etc. in the tooth back.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the arrival-of-the-mail vibrator which tells arrival of the mail by vibration in a radio communication equipment, for example, the telephone which makes a cellular phone a key objective.

[0002]

[Description of the Prior Art] Although a ringer sound etc. is sounded and arrival of the mail is usually conventionally told in telephone at the time of arrival of the mail, there is also a thing made to sense by vibration, without making a sound.

[0003] Drawing 4 is what showed the conventional portable telephone having such a vibrating motor, (a) is a top view and (b) is a side elevation. 31 is a vibrating motor with which a control section and 32 cause the wireless section and 33 makes vibration cause.

[0004]

[Problem(s) to be Solved by the Invention] In this case, since the wireless section 32 and a vibrating motor 33 are arranged in near, a certain amount of tooth space as the motor attachment section 34 is needed so that it may not have effect by vibration on the wireless section 32. Therefore, the trouble of becoming hindrance was in implementation of the miniaturization of the body of telephone, especially the formation of a thin form.

[0005] Moreover, when a user did not need the arrival by vibration, there was also a fault that a key 35 had to be operated one by one and a command change had to be performed.

[0006]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, this invention is constituted for the cell pack having the separated oscillating vibrator or oscillating vibrator, enabling said free body of equipment and free attachment and detachment, and changes the arrival by vibration, and the arrival by the sound to a radio communication equipment by the mechanical means.

[0007]

[Function] Since this invention does not build oscillating vibrator in the body of radio equipment, the formation of a thin form is possible and the change of a switch etc. can realize arrival by vibration, and arrival by the sound easily.

[0008]

[Example] Drawing 1 shows the portable telephone by the 1st example of this invention, and it is the side elevation which (a) made the part the top view and made (b) the cross section.

[0009] The body 1 of telephone consists of the same control section 2 as usual, the wireless section 3 and an antenna 4, and a body 1 and the cell pack 5 which can be detached and attached. A control section 2 and the wireless section 3 are connected by the connector 6, and the cell pack 5 is constituted so that it can detach and attach by one-touch by actuation of a body 1 and a latch lever 7.

[0010] The cell 8 used as the power source of a body 1 is dedicated into the case 9 of the cell pack 5, and the control section 2 touches with the body terminal 10 and the terminal 11. A substrate 12 is formed in the interior of the cell pack case 9, the vibrating motor 13 used as oscillating vibrator is

fixed to this substrate 12 with the adhesion means 14, for example, a double-sided tape, and the electrical part and the circuit changing switch 15 are carried further.

[0011] A circuit changing switch 15 is for making a vibrating motor 13 turn on and off, and changing the arrival by vibration, and the arrival by the sound, and a power source is supplied to a vibrating motor 13 from a cell 8 through a circuit changing switch 15.

[0012] Now, if an antenna 4 receives the electric wave which sent from the outside, a terminating signal will be sent out to the substrate 12 of the cell pack 5 through the body terminal 10 and a terminal 11 from the wireless section 3 and a control section 2.

[0013] Since it is the arrival by vibration when a circuit changing switch 15 is ON, with said terminating signal, a power source is supplied, a vibrating motor 13 drives, vibration is generated, and arrival of the mail is told.

[0014] Since a vibrating motor 13 is still off if the circuit changing switch 15 is turned OFF when you do not wish the arrival by vibration, arrival by the sound is performed.

[0015] Since the motor attachment section 34 was lost while lessening effect on the wireless section 3 by holding a vibrating motor 13 in the cell pack case 9, as described above, it is effective in thin form-ization of the body of telephone being realizable.

[0016] Moreover, since the arrival by vibration and the arrival by the sound are easily changed with a circuit changing switch 15, there is no need for the command change by the key stroke like before.

[0017] Drawing 2 shows the 2nd example and is the simple top view of the body of telephone, and arrival-of-the-mail vibrator.

[0018] The arrival-of-the-mail vibrator 16 carried the vibrating motor 20 fixed to the substrate 19 which uses a dry cell 18 and this dry cell 18 as a power source into the outer frame case 17, was constituted, and is completely separated with the body 1 of telephone.

[0019] The case 17 of the arrival-of-the-mail vibrator 16 is connected with the body 1 of telephone free [attachment and detachment] through a code 21 with a connecting means 22, for example, a plug, and the earphone / microphone jack terminal 23.

[0020] When the plug 22 and the jack terminal 23 are connected, if an antenna 4 receives the electric wave from the outside, the signal with which a ringer tone is sounded for the jack terminal 23 from the body 1 of telephone will be sent out, it is sent to a substrate 19 through a plug 22, and a power source is supplied from a dry cell 18, a vibrating motor 20 drives, vibration is generated, and arrival of the mail is told.

[0021] When you do not wish the arrival by vibration, arrival by the sound is performed that what is necessary is just to remove the plug 22 from the jack terminal 23.

[0022] Since it is not necessary to take the tooth space which the effect on the wireless section which vibration gives by having made the arrival-of-the-mail vibrator 16 separate from the body 1 of telephone completely is completely lost as described above, and puts a vibrating motor into the body of telephone, the miniaturization of the part body is much more attained.

[0023] Since a degree of freedom increases also about own size of arrival-of-the-mail vibrator, it can be small, it is not necessary to use the vibrating motor of cost quantity, and the vibrating motor of low cost can be chosen especially.

[0024] Moreover, when you do not need the arrival by vibration, the effectiveness that handling is very easy is acquired from a jack terminal that what is necessary is just to pull out the plug.

[0025] Furthermore, since arrival-of-the-mail vibrator can also be made into an option, there is also an advantage which can extend the width of selection of a purchaser.

[0026] Drawing 3 is the side elevation of arrival-of-the-mail vibrator, and has attached the clip 24 in the tooth back of the arrival-of-the-mail vibrator 16.

[0027] If the clip 24 is hooked on the pocket, the belt, etc., the vibration at the time of arrival of the mail can be felt easily.

[0028] Although the above-mentioned example has explained the radio communication equipment as a portable telephone, since the vibrating motor was made to build in a cell pack in the 1st example, it is applicable also to the usual cordless phone.

[0029] Moreover, since oscillating vibrator has gained separate independence with the body in the 2nd example, it is applicable to a modem, mounted facsimile, etc. with an arrival-of-the-mail function.

[0030]

[Effect of the Invention] Since the cell pack having the body of a radio communication equipment, oscillating vibrator, or oscillating vibrator was constituted according to this invention, enabling said free body and free attachment and detachment as explained to the detail above, the miniaturization of the body of a radio communication equipment can be realized, and there is an advantage which can change arrival by vibration and arrival by the sound easily by the mechanical means.

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TECHNICAL FIELD

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PRIOR ART

[Description of the Prior Art] Although a ringer sound etc. is sounded and arrival of the mail is usually conventionally told in telephone at the time of arrival of the mail, there is also a thing made to sense by vibration, without making a sound.

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EFFECT OF THE INVENTION

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TECHNICAL PROBLEM

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MEANS

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, this invention is constituted for the cell pack having the separated oscillating vibrator or oscillating vibrator, enabling said free body of equipment and free attachment and detachment, and changes the arrival by vibration, and the arrival by the sound to a radio communication equipment by the mechanical means.

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OPERATION

[Function] Since this invention does not build oscillating vibrator in the body of radio equipment, the formation of a thin form is possible and the change of a switch etc. can realize arrival by vibration, and arrival by the sound easily.

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EXAMPLE

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] (a) It is the top view showing the telephone by the 1st example of this invention.

(b) It is the side elevation which similarly made the part the cross section.

[Drawing 2] It is the simple top view of the body of telephone, and arrival-of-the-mail vibrator by the 2nd example of this invention.

[Drawing 3] It is the side elevation of the arrival-of-the-mail vibrator shown in drawing 2.

[Drawing 4] (a) It is the top view showing the conventional telephone.

(b) Similarly it is a side elevation.

[Description of Notations]

1 Body of Telephone

5 Cell Pack

7 Latch Lever

9 Cell Pack Case

12 Substrate

13 Vibrating Motor

15 Circuit Changing Switch

16 Arrival-of-the-Mail Vibrator

17 Arrival-of-the-Mail Vibrator Case

18 Dry Cell

19 Substrate

20 Vibrating Motor

22 Plug

23 Earphone / Microphone Jack Terminal

24 Clip

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DRAWINGS

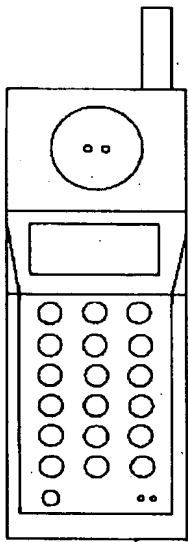
[Drawing 3]



着信バイブレータの断面図

[Drawing 1]

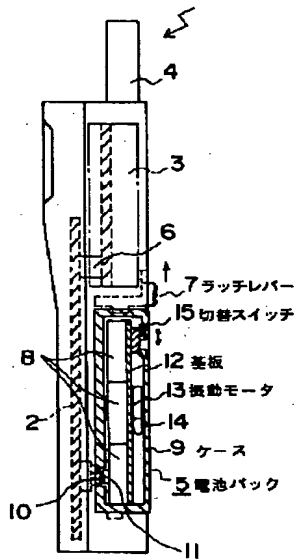
(a)



1 電話機本体

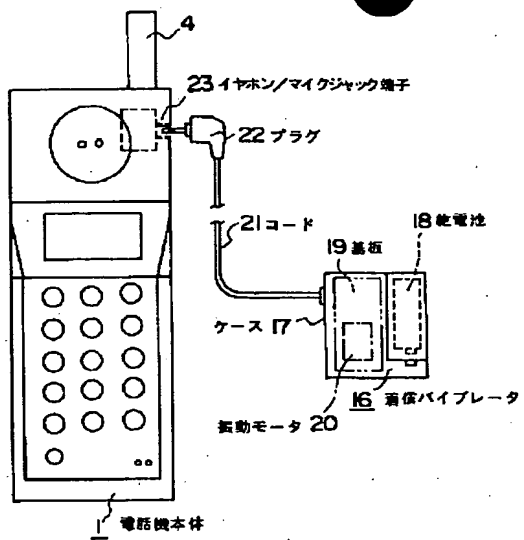
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(b)



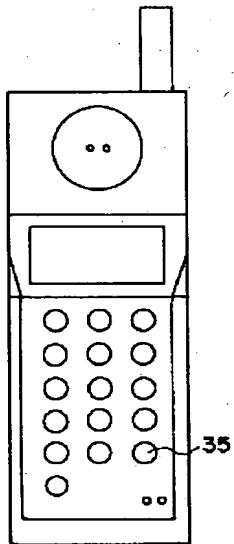
本発明の実施例の側面図

[Drawing 2]



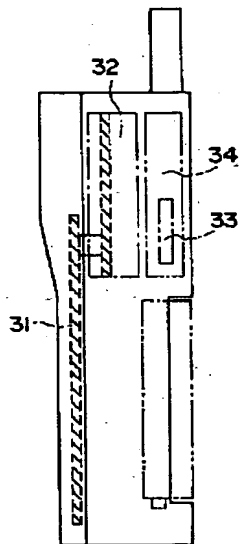
本発明の実施例の簡略平面図

[Drawing 4]
(a)



従来例の平面図

(b)



従来例の側面図

[Translation done.]

(19)日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11)特許出願公開番号

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(71)出願人 000000295

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(74)代理人 弁理士 鈴木 敏明

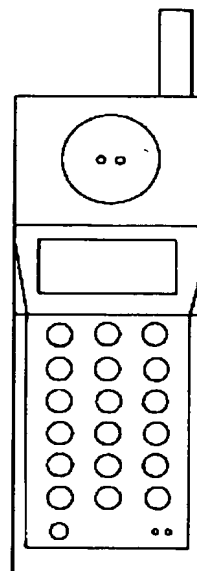
(54)【発明の名称】 無線通信装置の着信バイブレータ

(57)【要約】

【目的】 無線通信装置本体の小形化を図り、振動による着信と音による着信を簡単な操作で切替可能にする。

【構成】 無線通信装置本体とは分離した振動バイブレータ又は振動バイブレータを内蔵した電池パックを前記装置本体と着脱自在に構成し、振動による着信と音による着信を機械的手段により切替えるようにしたものである。

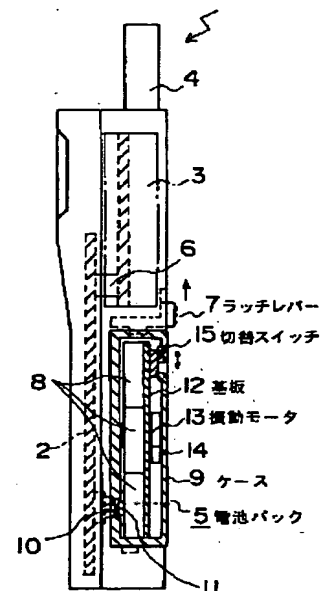
(a)



1 電話機本体

本発明の実施例の平面図

(b)



本発明の実施例の側面図

(2)

【特許請求の範囲】

【請求項1】 無線通信装置本体と着脱自在に構成された電池パックケース内に、基板に固定された振動モータと、この振動モータをオン・オフさせて振動による着信と音による着信を切替えるスイッチを有し、前記装置本体で受信した着信信号により前記振動モータが駆動され、振動を発生させて着信を知らせることを特徴とする無線通信装置の着信バイブレータ。

【請求項2】 無線通信装置本体と接続手段により着脱自在に構成された着信バイブレータケース内に、乾電池と、この乾電池を電源とし基板に固定された振動モータを有し、前記接続手段を着脱させて振動による着信と音による着信を切替え、前記装置本体で受信した着信信号により前記接続手段を通して着信音を鳴らす信号により前記振動モータが駆動され、振動を発生させて着信を知らせることを特徴とする無線通信装置の着信バイブレータ。

【請求項3】 前記無線通信装置が携帯電話機である請求項1又は2記載の無線通信装置の着信バイブレータ。

【請求項4】 前記接続手段がジャック端子とプラグである請求項2記載の無線通信装置の着信バイブレータ。

【請求項5】 ポケット等に装着するためのクリップを背面に設けた請求項2又は4記載の無線通信装置の着信バイブレータ。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は無線通信装置、例えば携帯を主目的とする電話機において着信を振動で知らせる着信バイブレータに関するものである。

【0002】

【従来の技術】従来、電話機においては、着信時にリング音等を鳴らして着信を知らせるのが普通であるが、音を出さずに振動で感知させるものもある。

【0003】図4はそのような振動モータを内蔵した従来の携帯電話機を示したもので、(a)は平面図、

(b)は側面図である。31は制御部、32は無線部、33は振動を起させる振動モータである。

【0004】

【発明が解決しようとする課題】この場合、無線部32と振動モータ33が近くに配置されているので、無線部32に振動による影響を与えないようにモータ取付部34としてある程度のスペースが必要となる。そのため、電話機本体の小形化特に薄形化の実現に妨げになるという問題点があった。

【0005】また、ユーザが振動による着信を必要としない場合には、いちいちキー35を操作してコマンド切替を行なわなければならないという欠点もあった。

【0006】

【課題を解決するための手段】上記課題を解決するため、本発明は無線通信装置とは分離した振動バイブレー

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タ又は振動バイブレータを内蔵した電池パックを前記装置本体と着脱自在に構成し、振動による着信と音による着信を機械的手段により切替えるようにしたものである。

【0007】

【作用】本発明は振動バイブレータを無線装置本体に内蔵しないので、薄形化が可能であり、振動による着信と音による着信をスイッチの切替え等により簡単に実現出来る。

【0008】

【実施例】図1は本発明の第1の実施例による携帯電話機を示しており、(a)は平面図、(b)は一部を断面にした側面図である。

【0009】電話機本体1は、従来と同様な制御部2、無線部3及びアンテナ4と、本体1と着脱自在な電池パック5とで構成されている。制御部2と無線部3はコネクタ6により接続され、電池パック5は本体1とラッチレバー7の操作によりワンタッチで着脱出来るように構成されている。

【0010】本体1の電源となる電池8は電池パック5のケース9の中に納められており、制御部2とは本体端子10と端子11により接触している。電池パックケース9の内部には基板12が設けられ、この基板12に振動バイブレータとなる振動モータ13が接着手段例えば両面テープ14により固定され、更に電気部品と切替スイッチ15が搭載されている。

【0011】切替スイッチ15は振動モータ13をオン・オフさせて振動による着信と音による着信を切替えるためのもので、振動モータ13には切替スイッチ15を通して電池8から電源が供給される。

【0012】さて、外部から発信した電波をアンテナ4で受信すると、無線部3と制御部2から電池パック5の基板12に本体端子10、端子11を通して着信信号が送出される。

【0013】切替スイッチ15がオンの時は振動による着信であるので、前記着信信号によって電源が供給されて振動モータ13が駆動し、振動を発生させて着信を知らせる。

【0014】振動による着信を希望しない時は切替スイッチ15をオフにしておけば振動モータ13はオフのままなので、音による着信が行なわれる。

【0015】上記したように振動モータ13を電池パックケース9内に収容することにより、無線部3への影響を少なくすると共にモータ取付部34を無くしたので、電話機本体の薄形化が実現出来る効果がある。

【0016】また、切替スイッチ15により振動による着信と音による着信を容易に切替えられるので、従来のようにキー操作によるコマンド切替の必要はない。

【0017】図2は第2の実施例を示し、電話機本体と着信バイブレータの簡略平面図である。

(3)

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【0018】着信バイブレータ16は外筐ケース17内に乾電池18とこの乾電池18を電源とする基板19に固定された振動モータ20を搭載して構成され、電話機本体1と完全に分離独立している。

【0019】着信バイブレータ16のケース17はコード21を通して接続手段例えばプラグ22とイヤホン／マイクジャック端子23とで着脱自在に電話機本体1と接続される。

【0020】プラグ22とジャック端子23とが接続されている場合には、外部からの電波をアンテナ4で受信すると電話機本体1からジャック端子23に着信音を鳴らす信号が送出され、プラグ22を通して基板19に送られ、乾電池18から電源が供給されて振動モータ20が駆動し、振動を発生させて着信を知らせる。

【0021】振動による着信を希望しない時はプラグ22をジャック端子23から外しておけば良く、音による着信が行なわれる。

【0022】上記したように着信バイブレータ16を電話機本体1から完全に分離独立させたことにより、振動が与える無線部への影響が全くなり、また電話機本体に振動モータを入れるスペースをとる必要がないので、その分本体の小形化が一層可能になる。

【0023】着信バイブレータ自身の大きさについても自由度が増すため、特に小形でコスト高の振動モータを使用しなくても良く、低コストの振動モータを選択することが出来る。

【0024】また、振動による着信を必要としない場合はジャック端子からプラグを抜いておけば良く、取扱いが非常に容易であるという効果が得られる。

【0025】更に、着信バイブレータをオプションとすることも出来るので、購入者の選択の巾を広げることが出来る利点もある。

【0026】図3は着信バイブレータの側面図で、着信バイブレータ16の背面にクリップ24を取付けてある。

【0027】ポケットやベルト等にクリップ24を引っ掛けておけば、着信時の振動を容易に体感することが出来る。

【0028】上記の実施例では無線通信装置を携帯電話

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機として説明してきたが、第1の実施例では振動モータを電池パックに内蔵させたので、通常のコードレスホンにも適用可能である。

【0029】また第2の実施例では振動バイブレータが本体と分離独立しているの、着信機能を持つモデムや車載ファックス等にも適用することが出来る。

【0030】

【発明の効果】以上詳細に説明したように、本発明によれば無線通信装置本体と振動バイブレータ又は振動バイブレータを内蔵した電池パックを前記本体と着脱自在に構成したので、無線通信装置本体の小形化が実現出来、振動による着信と音による着信の切替えを機械的手段により簡単に行なえる利点がある。

【図面の簡単な説明】

【図1】(a)本発明の第1の実施例による電話機を示す平面図である。

(b)同じく一部を断面にした側面図である。

【図2】本発明の第2の実施例による電話機本体と着信バイブレータの簡略平面図である。

【図3】図2に示した着信バイブレータの側面図である。

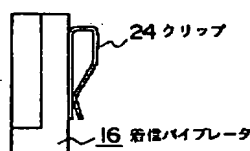
【図4】(a)従来の電話機を示す平面図である。

(b)同じく側面図である。

【符号の説明】

- | | |
|----|----------------|
| 1 | 電話機本体 |
| 5 | 電池パック |
| 7 | ラッチレバー |
| 9 | 電池パックケース |
| 12 | 基板 |
| 13 | 振動モータ |
| 15 | 切替スイッチ |
| 16 | 着信バイブレータ |
| 17 | 着信バイブレータケース |
| 18 | 乾電池 |
| 19 | 基板 |
| 20 | 振動モータ |
| 22 | プラグ |
| 23 | イヤホン／マイクジャック端子 |
| 24 | クリップ |

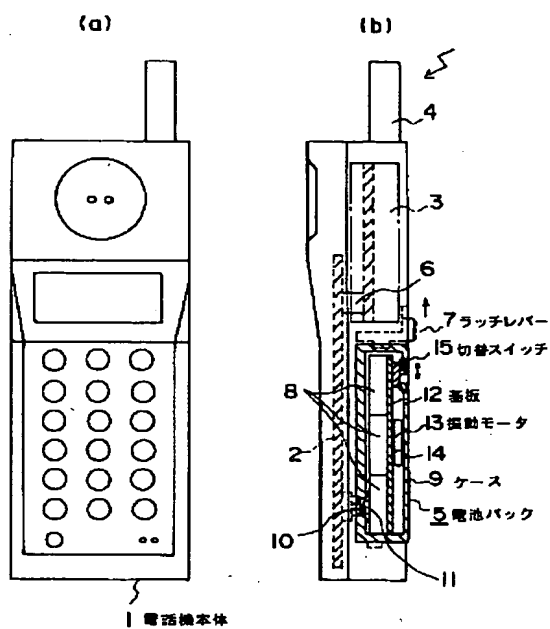
【図3】



着信バイブレータの側面図

(4)

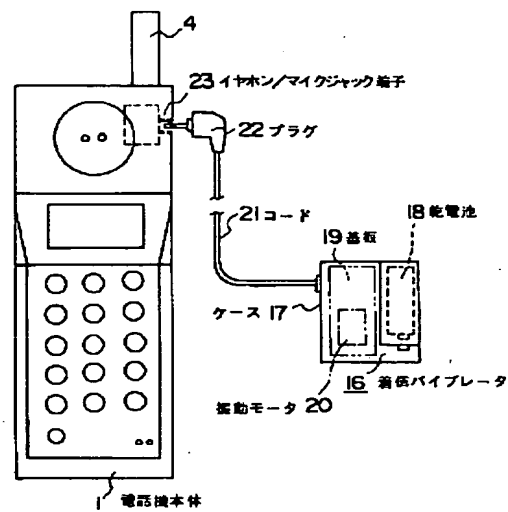
【図1】



本発明の実施例の平面図

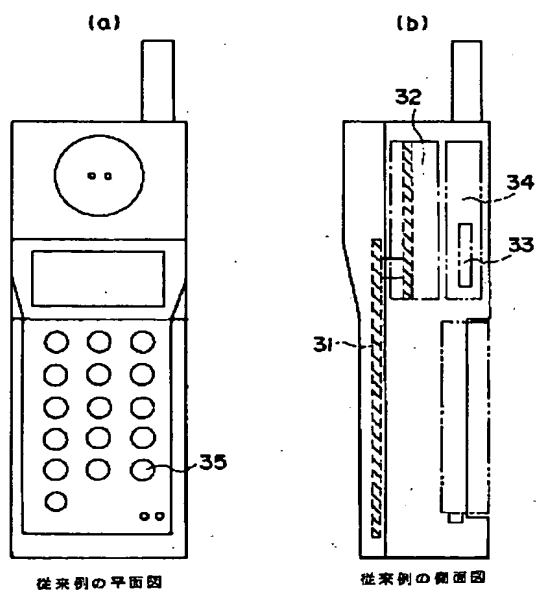
本発明の実施例の側面図

【図2】



本発明の実施例の簡略平面図

【図4】



従来例の平面図

従来例の側面図